metabolic activity ($p = 0.002$) and differentiation ($p < 0.001$) relative to control glass substrates at day 7. Similar results were observed on gold, and thiol surfaces were also found to initiate early neurodifferentiation in the absence of trophic factors.
Conclusion: Organofunctionalisation potentially offers a simple and cost-effective cross-platform technology through which the biocompatibility of neurosurgical implants could be easily improved. Our results are highly encouraging, yet it is now essential that work is repeated using a co-culture model to investigate the inflammatory component of device rejection.

0356: ORGAN DONATION REGISTRATION: EVIDENCE BASED MARKETING?

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Aim: 778 Scots are waiting for a transplant and last year 43 died whilst waiting. Only 42% of eligible Scots are on the organ donor register (ODR). Apathy is a barrier: 32% of those unregistered said they would join, demonstrating a potential focus for a targeted marketing campaign.
Methods: In 2005, the Scottish "Kill Jill" campaign focused on the contemporary trend of voting for outcome (cost: £325,000). In 2008, the "Connected" marketing had a more personal approach (cost: £615,000).
Results: "Kill Jill" increased new Scottish registrations by 33%, compared to the 6.5% English increase over the same period. The 108,423 new registrations should mean six additional renal transplants over a decade. The subsequent "Connected" campaign generated 34,729 more registrations, a 1.8% growth in ODR. It was predicted that this would result in 2.6 extra transplants.
Conclusion: Marketing is expensive and results are difficult to quantify. One renal transplant saves £214 000 per person compared to dialysis. If only one of 108,423 donates both kidneys after death, the "Kill Jill" campaign has paid for itself. The "Connected" campaign predicted that each £1 spent, saves the NHS £5.28. ODR campaigns deliver a healthy return-of-interest and the initial considerable outlay should result in many lives transformed and saved.

0685: EXPLORING THE TUMOUR STROMA MACROPHAGES TO IDENTIFY RESPONDERS TO RADIOTHERAPY IN LOCALLY ADVANCED RECTAL CANCER

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Aim: Only half the patients with locally-invasive-rectal-carcinoma (LIRC) respond to short-course-preoperative-neoadjuvant radiotherapy(SCPRT). A predictive test enabling better patient selection could avoid undue radiation exposure to poor-responders. Macrophages within the tumour immune microenvironment with tumouricidal M1 and tumour-protective M2 phenotypes could be modulating this response. This study investigates the possible predictive value of M1 and M2 in identifying patients' likely response to SCPRT.
Methods: Dual-staining immunohistochemistry was performed on 29 biopsy and post-SCPRT resection LIRC specimens with CD68 as macrophage marker, Human-Leukocyte-Antigen-DR(HLA-DR) as M1-marker and Cluster-of-Differentiation-163(CD163) as M2-marker. Specimens were scored for hot-and-random spots by Nuance-3.0.2 and compared with patients' outcome data.
Results: A significant difference was found for high and low M1 percentages with a tumour response of 20% and 80%, respectively ($p = 0.017$). No such difference was found for M2. The ratio of M1/M2 in biopsy vs. resection samples was found to be significantly different ($p < 0.05$), and change in ratio producing a significant mean ($p = 0.024$).
Conclusion: Patients with a variable macrophage phenotype composition within LIRC biopsies respond differently to SCPRT. Further investigation involving a panel of macrophage/other immune-cell markers could verify and validate these findings and develop them as predictive tests identifying good-responders to radiotherapy in patients with LIRC.

0739: HEAD AND NECK CANCER DETECTION: THE EFFICACY OF THE 2-WEEK-WAIT REFERRAL PATHWAY

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Aim: Identify significant factors in correct cancer diagnosis through the ENT 2-week-wait referral pathway.
Methods: Retrospective review of 5083 patients' notes with possible head and neck caner who were referred through the 2-week-referral pathway from 2007 to 2010 in 2 tertiary UK Hospitals. Multivariate binary logistic regression analysis was performed to identify significant factors in cancer diagnosis. The final model was compared to a model created by the current NICE guidance.
Results: Low sensitivity and high specificity was found for all presenting symptoms. Presence of hoarseness for more than 6 weeks; dysphagia for more than 3 weeks; presence of blood in mouth with concurrent sensation of lump in throat; the sensation of lump in neck ; sore throat; otalgia; odynophagia; presence of otalgia with concurrent lump in throat sensation are highly statistically significant symptoms for correct diagnosis of an ENT cancer. Our final suggested model has higher predictive value in correct cancer diagnosis comparing to the NICE guidance model.
Conclusion: The current NICE referral guidance failed to increase detection rates of ENT cancers. We are recommending a new national referral checklist, based on our logistic regression analysis, to be used by General Practitioners when assessing patients with probable ENT cancer.

0777: A PROSPECTIVE STUDY OF CART, CHROMOGRANIN A, CHROMOGRANIN B AND PANCREATIC POLYPEPTIDE IN THE DIAGNOSIS OF PANCREATIC NEUROENDOCRINE TUMOURS

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Aim: Biochemical markers are an integral part of pancreatic neuroendocrine tumour (pNET) diagnosis, however, the current gold standard of biomarkers, chromogranin-A (CgA) has significant limitations. Recent research has suggested other circulating markers including cocaine-and-amphetamine-regulated-transcript (CART), chromogranin-B(CgB) and pancreatic polypeptide(PP) may have utility as pNET diagnostic markers. To investigate the sensitivities and specificities of measuring circulating CART, CgA, CgB and PP for pNET diagnosis.
Methods: Plasma samples were obtained from patients with pNETs, non-neuroendocrine pancreatic disease (NNPD) and non-pancreatic disease (NPD) and circulating concentrations of CART, CgA, CgB and PP were measured.
Results: Circulating CART was the only marker significantly elevated by pNETs compared to NPD (48.00 (35.75–67.00 pmol/L) [NPD] vs. 89.00 (66.00–147.0 pmol/L) [pNET], $p < 0.01$, $n = 7–42$). CART was the most sensitive marker for pNETs, with a sensitivity of 71%, compared to 29%, 25%, and 0% for CgA, CgB and PP respectively. It also had a specificity of 88%, which was lower than the specificities of CgA, CgB and PP with 100%, 98%, 94% respectively.
Conclusion: These data suggest that circulating CART may be a more sensitive and reliable marker than CgA, CgB or PP in pNET diagnosis which may result in earlier diagnosis and so a greater proportion of resectable tumours at presentation.

Surgical Training and Education Short Paper Session

0065: COGNITIVE TASK ANALYSIS PERFORMANCE OF SURGICAL TRAINEES USING AN OPEN HERNIA REPAIR SIMULATOR

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Aim: To evaluate the use of an interactive open hernia simulator on the cognitive task analysis performance of trainees compared to other methods of acquiring the knowledge for the operation.
Methods: 32 foundation and core surgical trainees were randomised to receive 1 of 4 interventions (interactive open hernia repair simulator) G1, non-interactive open hernia repair simulator G2, a video tutorial of the